NATIONAL WEATHER SERVICE

Western Region Notes

JANUARY 15, 2004

REGIONAL DIRECTOR'S OFFICE

Great Job Salt Lake WFO, Portland WFO, Northwest RFC, and Seattle WFO: Over the past few weeks, active weather has been commonplace in parts of the region. Beginning on December 25 and continuing through January 3, 2004, snowstorms dumped from four to 10 feet of snow along the Wasatch Front and the Wasatch mountains. One of the storms brought over 110 mph winds in the mountains. The Salt Lake City office did an excellent job forecasting the storms with an average lead time of 31 hours for 41 warnings.

On January 6-7, a strong storm moved into western Washington and Oregon. Snow and ice brought the cities of Portland and Seattle to a near standstill. Again, excellent watches and warning proceeded the event. A detailed description of the event is contained under MSD's section of the staff notes. At Portland, employees at both the WFO and RFC had to stay overnight because of the dangerous icy conditions. Thanks to all who put in long hours under trying conditions to provide a great service to our customers.

Congratulations to All - System Certification and Accreditation Completed: All Western Region offices completed the National Weather Service Certification and Accreditation of their IT systems by December 30, 2003. The commitment, level of effort, and cooperation needed to complete this requirement within a short time frame was nothing short of outstanding. Thanks to everyone involved.

AROUND THE REGION

The Avalanche Outreach concludes with a trip to Galena Summit.

Avalanche Outreach: On December 8-9, WFO Pocatello MIC Jim Meyer, Meteorologist Jack Messick, and Lead Meteorologist Rick Winther were invited by the Sawtooth National Forest Avalanche Center and the Sun Valley Heli-Ski club to give weather presentations in Idaho's Sun Valley region. The presentations covered a variety of topics including Winter Weather 101, the new Digital Gridded Database, case study of a heavy snow event in Sun Valley, and the winter outlook for 2003-2004. The presentations incorporated material about the new capabilities with the digital database. WFO Pocatello staff found that many of their prototype digital products on the internet were being used by both the Avalanche Center and the Heli-Ski club several times a

day. The new Point Forecast Matrices (PFM) were especially useful to the Avalanche Center and the Heli-Ski club, providing details that they were unable to get in a text product.

The forecasters from the Avalanche Center provided a crash course on how core snow samples (Rutschblock) were performed in the back country. Avalanches are controlled by three variables: terrain, snow pack characteristics, and weather. These factors decide the actual avalanche risk. With this knowledge, the avalanche forecaster can issue a forecast of the avalanche danger for the Sawtooth Mountain Range. The WFO Pocatello members also had the opportunity to snow-shoe into the Sawtooth Mountains near 9,000 feet elevation to look at the Galena Summit SNOTEL site. The trip concluded at Galena Lodge, where they met the lodge manager and found that the Lodge would reestablish a COOP program. Weather information from this elevation will greatly enhance WFO Pocatello's forecasting ability, especially the type and amount of precipitation near this high elevation location.

Viewing area impacted near the San Francisco River at Clifton River Forecast Point. Pictured from left to right: Steve Reedy, Mike Schaffner, and Greg Mollere

Tucson Staff Gets Tour of HSA: On January 8, Mike Schaffner (WFO Tucson Hydrologist) led a Hydrologic Service Area (HSA) Tour. The HSA tour is designed to give new operations staff an overview of the HSA. They visited Graham and Greenlee Counties in the remote northeast part of Tucson's area of hydrologic responsibility. Three river forecast points, a river data point, an ungaged site, and one COOP site were visited. Participants were Greg Mollere (Senior Forecaster), Steve Reedy (General Forecaster), and Pamela Wollack (Meteorologist Intern). Participants even got their hands dirty and estimated discharge along the Gila River below Clifton.

Photos of the Week:

A block of ice from the ASOS wind sensor at the Portland Airport

Portland forecast offices get hit with snow and ice

Weather Observers at Mt. Rainier National Park Receive Award: On January 13, the NWS presented a special Public Appreciation Award to the National Park Service rangers at Mt. Rainier, Washington, who face record snowfalls and blizzard conditions to collect valuable weather data. Rainier Paradise Ranger Station, which has been an official NWS cooperative observer site since 1916, has the distinction of being one of the world's snowiest stations on average. Park Rangers stationed at this park have faithfully recorded about 50,000 inches (4,200 feet) of snow since 1916. During winter and early summer months, this means trekking one-quarter mile over up to 25 feet of snowpack to reach the observing location.

METEOROLOGICAL SERVICES DIVISION

New Fire Weather Program Leader: Roger Lamoni, former long-standing WCM at WFO Reno has reported to MSD as the new Fire Weather Program Manager. Roger brings a wealth of knowledge, both in fire weather and field operations, to MSD. Roger's arrival frees up Scott Birch to become the "full-time" Regional Aviation Meteorologist (RAM). Accordingly, Roger is now the prime contact for all fire weather issues and Scott for aviation. Welcome aboard Roger!

Statement of the Week: This week's Statement of the Week is a Memo for the Record (MFR) from WFOs Portland and Seattle-Tacoma regarding the major winter/ice storm which occurred January 5-7. Both WFOs did an outstanding job issuing outlooks, watches, and warnings well in advance of this major event. We chose the MFR as the statement of the week to outline all the excellent activities of the WFOs and serve as a reminder to all WR staff of the necessity of MFRs for storm events which either result in fatalities or widespread media coverage. Instructions for preparation of these reports are contained in WR NWSI 13-2003. The reports must be sent to MSD prior to 5:00 a.m. Mountain Time. Accordingly reports prepared after 4:00 p.m. or on weekends must be accompanied by a telephone call to MSD/HCSD staff as per 13-2003. The MFRs are used by NWSH to prepare subsequent reports to the NOAA Administrator. We have included the e-mail to Admiral Lautenbacher associated with the PacNW storm as an example. Lastly the reports must include lead times for all outlooks, watches, and warnings issued. Kudos to the staff of WFOs Seattle-Tacoma and Portland for their excellent work!

*IMPORTANT NOTE: THIS MFR IS **UNUSUALLY** LONG, SINCE IT SUMMARIZES A MAJOR STORM AFFECTING MULTIPLE OFFICES. NORMALLY MFRS ARE NOT THIS DETAILED AND ABOUT ONE TO ONE AND ONE-HALF PAGES IN LENGTH.*

Memorandum For: The Record

From: Stephen Todd, MIC & Tyree Wilde, WCM
WFO Portland, OR

Jay Albrecht, Senior Forecaster
Ted Buehner, WCM

Subject: Summary - Significant Winter Storm in Western Washington and Northwest Oregon

Event: A strong winter storm struck the Pacific Northwest beginning early Tuesday, January 6th and lasted through Wednesday January 7th. An arctic airmass settled over the region on Sunday, January 4th and persisted through Wednesday Jan 7th. The storm included significant snow and freezing across Western Washington and Northwest Oregon.

In Oregon, lower elevation snowfall totals for the event ranged from 3 inches along the north Oregon coast to up to 8 inches in Northern Willamette Valley and Clark County in southwest Washington. Freezing rain fell along the Oregon coast and throughout the Willamette Valley with wide-spread ice accumulations of 0.75 to 1.0 inch and isolated pockets of 2.0 inch ice accumulations.

In Western Washington, lower elevation snowfall totals through Tuesday evening ranged from 3 inches in the Everett Area to up to 11 inches along Hood Canal. Most of the Seattle metro area received 4 inches of snow. Large areas of the Kitsap Peninsula and southwest interior received 6 to 9 inches of snow. On Tuesday evening precipitation changed to freezing rain and sleet which continued into Wednesday morning. Due to strong pressure gradients across the Cascade mountains, very windy conditions were reported along the foothills of the Central Washington Cascades. Strong east wind gusts to 60 mph were between 9:30 AM and Noon on Tuesday morning.

With the exception of the Cascades and foothills, the freezing rain and snow changed to warmer rain by midday Wednesday, and the corresponding warnings ended.

This storm resulted in closure of all Schools and most businesses in Northwest Oregon and Western Washington on January 6th and 7th. Freezing rain closed the main North-South Interstate (I-5) between Eugene, Oregon and Roseburg, Oregon. Blizzard conditions resulted in the closure of the main East-West Interstate (I-84) between Troutdale, Oregon and Hood River, Oregon as well as Washington State Route 14 between Washougal, Washington and White Salmon, Washington (Columbia River Gorge).

Location: Northwest Oregon and Western Washington.

Office: WFO PQR and SEW.

Deaths: None known.

Injuries: Excluding injuries resulting from auto accident, no significant injuries reported.

Damage: Numerous vehicle accidents. Close to 150,000 residents and businesses were without power Wednesday in Western Washington, primarily as a result of the freezing rain.

Numerous trees and power lines down in Lane, Lincoln, Linn, Marion, Yamhill, Polk, Clackamas, Multnomah, Counties in Oregon and Clark County in Southwest Washington. This resulted in power outages to 46,000 people in these Oregon counties and 2000 people in Clark County, Washington. Several auto accidents including an accident on Highway 6 between two gasoline tankers that resulted in some leaking of gasoline. An automobile also slid into the Wilson River in Tillamook County, but emergency rescue people were able to get the person out of the water without injury. A total of 550 flights were canceled out of Portland International Airport between January 6th and 7th.

Outlooks: Winter Weather Outlooks (SEW/PQR) were issued for this storm at 5:00 PM Saturday Jan 3, 2004. Lead time 44 hours.

Watches: Winter storm Watches were issued for this storm at 4:55 AM, by PQR and 3:45 pm by SEW on Sunday, January 4th Lead time approximately 26 hours.

An urban and small stream advisory was issued at 545 AM Wednesday for lowland areas in anticipation of snow melt on frozen ground and roadways. A flood potential outlook was changed to a flood watch at 3 PM Tuesday, given the possibility of main stem flooding in six western Washington counties later in the week.

Warnings: A Winter Storm Warning was issued for all of the Portland CWA at 10:55 AM Monday, January 4th. Approximate lead time for warning was 20 hours. The Winter Storm Warning was upgraded to a Blizzard Warning at 9:45 AM Tuesday morning.

A Winter Storm Warning was issued for the entire Seattle CWA at 10:40 AM Monday, January 4th. Approximate lead time for warning was 20 hours.

Comments: Non-emergency personnel were released early due to the severity of this event. ACARS sounding data proved to be extremely valuable for determining the depth of the cold air near the Portland, Oregon airport. Precipitable water data from the NOAA Polar Orbiter satellite was extremely useful during the onset and duration of the snow and freezing rain event. Additionally, the Oregon Department of Environmental Quality temperature sensors on the KPTV tower at 1000, 1400, and 1800 feet were extremely useful in determining the depth of the cold air and the altitude of the warm layer.

Service: Followup statements were issued about every 6 to 8 hours during the event. Local storm reports were issued as information was received. Prior to the event on Monday at 1 PM, WFO Seattle conducted a well attended press briefing for area broadcast and print media in an effort to more fully raise community awareness and preparedness for this event. Department of Transportation representatives from Washington State, King County and city of Seattle also participated in the briefing. NW Cable News covered the 30-minute briefing live, reaching all of the Pacific Northwest. SEW had over 150 media contacts just prior to and during the event.

WFO Portland staff personally briefed the emergency managers on Monday, January 4th to relay this event would be a major winter storm for the area.

Radars: Operational and providing good data.

ASOS: All CWA ASOS' s suffered precipitation amount and weather sensor failures, likely due to the freezing precipitation, KHQM also had a wind sensor outage.

Satellite: Valuable information provided on the location of the main synoptic system.

User Response: Customers were impressed with the long lead time and accuracy of the forecast. Press coverage during this event was outstanding, reemphasizing the awareness and preparedness message. Given the snow event was forecast to increase during the Tuesday morning commute, many schools announced Monday night they were closed Tuesday.

While attending a previously scheduled city of Bellevue Washington emergency response team meeting on Wednesday Jan 7th, the 25 city agency members all expressed praise for the superb service and forecast accuracy provided by SEW, giving them plenty of time to prepare and respond well to the event. The city's transportation team indicated that traffic volumes were down at least 70% during the event, illustrating that the community responded appropriately to the advance warning.

DISCLAIMER

Any times listed pertaining to event occurrences and lead times associated with outlooks, watches and warnings are based on the best information available at the time this preliminary report was prepared. Subsequently, these data may be changed as time permits a more thorough investigation of the circumstances surrounding this event.

Email sent to NOAA Administrator Lautenbacher and staff:mailto:Jordan.St.John@noaa.gov

Subject: Significant Winter Storm in Pacific Northwest

A strong winter storm struck the Pacific Northwest beginning early Tuesday, January 6th. An arctic airmass had settled over the region. The storm included significant snow and freezing across northwest Oregon and Western Washington. In northwest Oregon lower elevation snowfall totals for the event through Tuesday evening ranged from 3 inches along the north coast to up to 8 inches in Northern Willamette Valley. Freezing rain has been reported along the coast and in the Willamette Valley. This storm has resulted in closure of all Schools and most businesses in northwest Oregon and western Washington. Freezing rain closed the main North-South Interstate (I-5) between Eugene, Oregon and Roseburg, Oregon. Blizzard conditions resulted in the closure of the main East-West Interstate (I-84) between Troutdale, Oregon and Hood River, Oregon.

In western Washington lower elevation snowfall totals for the event up to 6:30 PM Tuesday evening ranged from 3 inches in the Everett Area to up to 11 inches along Hood Canal. Most of the Seattle metro area received 4 inches of snow. Large areas of the Kitsap Peninsula and southwest interior received 6 to 9 inches of snow. Due to strong pressure gradients across the Cascade mountains, very windy conditions were reported along the foothills of the Central Washington Cascades. Strong east wind gusts to 60 mph were between 9:30 AM and Noon on Tuesday morning. On Tuesday evening precipitation changed to freezing rain and sleet across much of the western Washington, with moderate freezing rain fall rates reported on the central Washington coast and in the southwest interior. The storm was still in progress this morning and widespread light freezing rain (at both Portland and Seattle) and snow was still being reported across most of the area.

Both the Seattle and Portland Weather Forecast Offices (WFO) issued Winter Storm Watches for this storm early Sunday morning on January 4th. A Winter Storm Warning was issued for all of the Portland area of responsibility at 10:55 AM Monday, January 4th. Approximate lead time for the warning was 20 hours. The Winter Storm Warning was upgraded to a Blizzard Warning at 9:45 AM Tuesday morning. A Winter Storm Warning was issued for the entire Seattle area of responsibility at 10:40 AM Monday, January 4th. Approximate lead time for the warning was 20 hours. Followup statements and local storm reports have been issued every 6 to 8 hours during the event. Prior to the event, at 1:00 PM on Monday, January 5, WFO Seattle provided a press conference for Pacific Northwest broadcast and print media. Non-emergency personnel were released early due to the severity of this event. Two ASOS units had sensor failures likely due to freezing precipitation.

SCIENTIFIC SERVICES DIVISION

WR Webmaster Workshop, Jan 27-29, Reno: The focus of the workshop will be upgrading to the new web farm, IFPS web page implementation, AHPS web pages, meeting NWS web policy, security and other issues.

COMET Outreach Proposal Deadlines, Jan 19 and Mar 15: The Cooperative Program for Operational Meteorology, Education, and Training (COMET) has announced its 2004 Outreach Program Request for Proposals (RFP) for Cooperative Projects. The first draft of the NWS Cooperative proposal is due to the appropriate

NWS region by January 19, 2004. The final version must be submitted to the COMET Outreach Program by March 15, 2004.

The Cooperative Projects may be one to three years in duration and typically have budgets with a range from about $20,000 to $41,000. More information and submission requirements can be found online at: http://www.comet.ucar.edu/outreach/coop.htm.

The COMET Program is also accepting proposals for Partners Projects. The average Partners Project has been approximately $7,000 (excluding those items funded directly by the NWS). Since Partners Project funds are limited, it is unlikely a proposal will be funded if its budget significantly exceeds the average. Additional information and submission requirements are available at: http://www.comet.ucar.edu/outreach/part.htm.

WR PD&T and Intern Report - Due April 15: The office semi-annual Professional Development and Training Plan (PD&T) Report is due April 15.

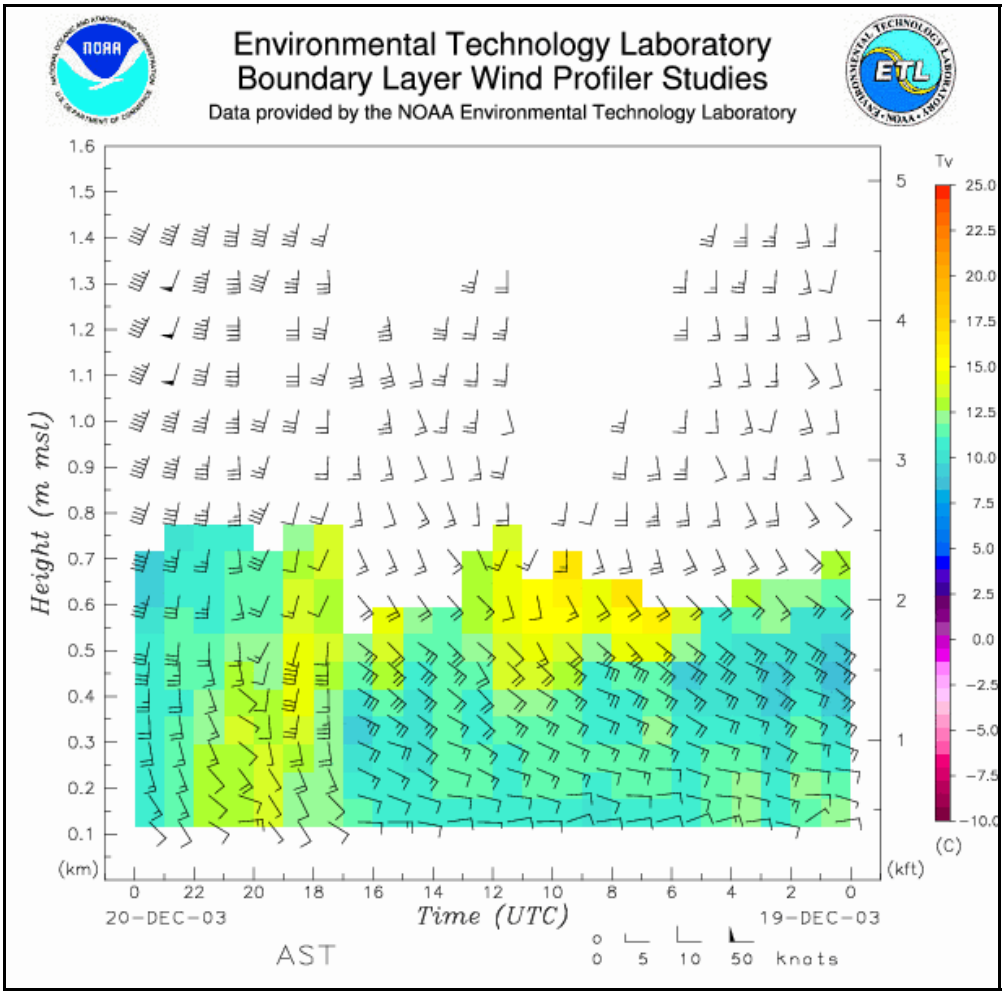
Advanced Warning Operations Course (AWOC): The Advanced Warning Operations Course is on schedule and all WFOs are required to send the SOO or radar focal point to the "train the trainer" portion of the course for one week in either in August or September 2004. WR SSD is working with the WDTB to weight our student slots to September in case of another busy fire weather season. **WFOs should take this mandatory course into account when setting up their summer annual leave schedule over the next few months**. AWOC will provide updated radar training to all NWS forecasters in the fall and winter of 2004/2005.

New Profiler Installed by OAR/ETL at Astoria, OR: OAR Environmental Technology Laboratory (ETL) with funding from the Coastal Storms Initiative (CSI) installed a profiler near the mouth of the Columbia River near Astoria, OR. Marty Ralph is the program leader. The data are being posted in real time on ETL's web page: http://www.etl.noaa.gov/et7/data/.

The first storm captured by the profiler produced a 50 knot low-level jet and snow levels of 6800-7600 ft. The precipitation was preceded by a very distinct period of low-level easterly flow and cooling coming out of the mouth of the Columbia River valley.

Time (UTC)	2330	2230	2130	2030	1930	1830	1730	1630	1530	1430	1330	1230
Snow Level (m)	2072	2141	2127	2313	none	none	none	none	none	none	none	none
Snow Level (ft)	6796	7022	6976	7586	none	none	none	none	none	none	none	none
Sfc Temp (C)	8.77	9.65	11.00	12.36	11.38	11.12	10.25	9.62	8.71	7.81	7.49	8.71

Time (UTC)	1130	1030	0930	0830	0730	0630	0530	0430	0330	0230	0130	0030
Snow Level (m)	none	none	none	none	none	none	none	none	none	none	none	none
Snow Level (ft)	none	none	none	none	none	none	none	none	none	none	none	none
Sfc Temp (C)	7.39	7.71	8.08	8.38	7.90	6.91	7.73	8.07	9.65	8.88	10.77	



SYSTEMS OPERATIONS DIVISION

New Electronics Program Manager Named: On December 28, Joe Lachacz assumed the position of WR Electronics Program Manager. Joe has an extensive background in electronics having served as an electronics technician and a Regional Maintenance Specialist. He is responsible for oversight and management of the electronics program. Please remember to contact Joe for your needs in this area.

AWIPS: On December 17, Western Region Headquarters installed AWIPS OB3. The install took about 10 hours. This includes time spent working with NCF focal points to resolve minor problems with the installation scripts.

Radar Archive Level 2 Project: As of January 5, 2004, all non-CRAFT sites in WR are transmitting level 2 data over the WR WAN. More changes are in store with the installation of ORPG Build 5.

Facilities Staff: Facilities completed the replacement of the two, 5 ton Bard air conditioning units on the radar equipment shelter at WFO Hanford with 2 new 6 ton Bard units. This work was completed as of January 9, 2004.

NWR: The Armstrong NWR training held in Salt Lake City on January 13 was a success. Twelve contractors that currently maintain this state of the art transmitter were trained. The contractors came from as close as Utah and as far away from Montana. The training was hosted by Western Region Headquarters.